

thoracic and metathoracic wings, a pair of prothoracic wings, bearing much the same relation to the others as the mesothoracic tegmina of tropical Phasmidae bear to their metathoracic wings. They are short subtriangular lobes having a well defined basis which is narrower, sometimes much narrower, than the parts beyond, and from which course three or four radiating nervules. Although on these individuals these parts spread laterally like the wings behind them, and are sometimes so broad at base as to appear at first sight rather as lateral lobes of the prothorax (especially in an English carboniferous insect described by Woodward, which Brongniart also places here) M. Brongniart believes that they were movable and could be extended backward along the body, so as to cover the base of the mesothoracic wings. As to the question which naturally arises, whether these members are to be regarded as atrophied organs and therefore presuppose a progenitor equipped with three pairs of fully developed and similar thoracic wings, M. Brongniart prefers to wait for further paleontological facts. One recalls in this connection the discussion between Haase and Cholodkovsky in the *Zoologischer anzeiger*, Nos. 235, 239 and 244.

A HINT FROM EMBRYOLOGY.—Mr. Wm. M. Wheeler has enriched entomology by a very interesting and suggestive paper on the appendages of the first abdominal segment in insect embryos (*Trans. Wisc. acad. sci.*, v. 3, pp. 87-140, pl. 1-3). Besides his own observations on *Phyllodromia*, *Periplaneta*, *Mantis*, *Xiphidium*, *Cicada*, *Zaitha* and *Sialis*, he gives a résumé of the observations of others and discusses the probable original function of these appendages among the ancestral insects when they must have extended to postembryonal life. Showing that in view of their origin from the ectoderm they must have been either respiratory organs, sense organs, or glands, he reviews the arguments for each hypothesis pro and con

and concludes in favor of the last; he is further inclined to regard them as having probably been odoriferous glands and his ingenious arguments in favor of this view will be found of interest to all entomologists. He proposes for these organs, which he notes to have been found only in the Heterometabola, the name of *Adenopodia*, a name which demands the acceptance of the glandular hypothesis. Considering the variety that he shows has already been found in the nature of the *adenopodia*, a fruitful field of investigation is opened, in which there is plenty of room for many workers.

KOLBE'S INTRODUCTION to the study of insects is slow in publication. Begun early in 1889, it was to be completed in six or seven small monthly parts. The fifth part has just appeared and the second of the twelve divisions of the book is not half finished, so much more extensive is our author's performance than his promise. The present part (pp. 225-272) deals with the mouth-parts of the sucking insects and the structure of the wings. In the former, under the bibliography of the *Lepidoptera*, we miss reference of any kind to either of Edward Burgess's papers, the most important ever published. In the latter there is no reference to Saussure's paper on the folding of the wings of cockroaches, but there will be found a good account of Adolf's views. There are 23 wood-cuts in the text of this part, mostly original.

DR. ANTON FRITSCH of Prag, has recently described in *Vesmir*, a popular Bohemian journal of natural history, the case of a caddis fly from the permian formation, and it may be regarded as the oldest indication of the *Phryganidae* yet brought to light.

EGGS OF LYCAENIDAE.—Doherty of Cincinnati has carried the study of the eggs of eastern *Lycaeninae* so far as to propose, in the *Journal of the Asiatic Society of Bengal* for 1889, four divisions to the *Theclini*, based principally upon characteristics drawn from